

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference HS/15 - 23004	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/EP2005/050000	International filing date (day/month/year) 03/01/2005	(Earliest) Priority Date (day/month/year) 12/01/2004
Applicant CIBA SPECIALTY CHEMICALS HOLDING INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 8 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☒ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

USE OF METAL COMPLEX COMPOUNDS COMPRISING PYRIDINE PYRIMIDINE OR S-TRIAZINE
DERIVED LIGANDS AS CATALYSTS FOR OXIDATIONS WITH ORGANIC PEROXY ACIDS AND/OR
PRECURSORS OF ORGANIC PEROXY ACIDS AND H₂O₂

5. With regard to the **abstract**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

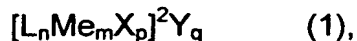
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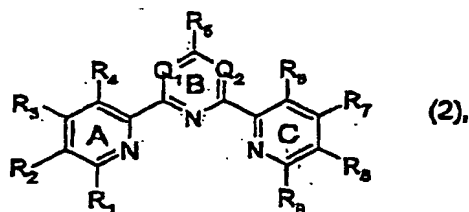
Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

The invention accordingly relates to the use as catalysts of at least one metal complex of formula (1)



wherein

L is a ligand of formula (2)



wherein

Q₁ is N or CR₁₀,

Q₂ is N or CR₁₁,

and wherein the remaining substituents have the meanings as defined in the claims, for oxidation reactions with (A) organic peroxy acids and/or (B) precursors of organic peroxy acid, the latter in combination with (B-1) H₂O₂ and/or (B-2) a precursor of H₂O₂, in particular in detergent compositions.

Further possible uses relate to epoxidation of olefins in organic synthesis, pulp and paper bleaching compositions, oxidative waste water treatment, automatic dishwasher formulations and disinfection compositions.

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Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-9, 12-25 (all part)

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9, 12-25 (all part)

insofar as relating to the use of at least one metal complex of formula (1), comprising a ligand of formula (2) wherein **both of Q1 and Q2 are N**, as catalysts for oxidation reactions with (A) organic peroxy acids and/or (B) precursors of organic peroxy acids, the latter in combination with (B-1) H2O2 and/or (B-2) a precursor of H2O2; detergent, cleaning, disinfecting or bleaching compositions comprising the metal complexes of formula (1) and specified oxidant systems (A, B); solid formulations comprising the metal complexes of formula (1) and the same specified oxidant systems (A, B).

2. claims: 1-9, 12-25 (all part)

insofar as relating to the use of at least one metal complex of formula (1), comprising a ligand of formula (2) wherein **one of Q1 and Q2 is N, the other being CR10 or CR11**, as catalysts for oxidation reactions with (A) organic peroxy acids and/or (B) precursors of organic peroxy acids, the latter in combination with (B-1) H2O2 and/or (B-2) a precursor of H2O2; detergent, cleaning, disinfecting or bleaching compositions comprising the metal complexes of formula (1) and specified oxidant systems (A, B); solid formulations comprising the metal complexes of formula (1) and the same specified oxidant systems (A, B).

3. claims: 1-9 (part), 10-11 (whole), 14-25 (part)

insofar as relating to the use of at least one metal complex of formula (1), comprising a ligand of formula (2) wherein **both of Q1 and Q2 are CR10 or CR11**, as catalysts for oxidation reactions with (A) organic peroxy acids and/or (B) precursors of organic peroxy acids, the latter in combination with (B-1) H2O2 and/or (B-2) a precursor of H2O2; detergent, cleaning, disinfecting or bleaching compositions comprising the metal complexes of formula (1) and specified oxidant systems (A, B); solid formulations comprising the metal complexes of formula (1) and the same specified oxidant systems (A, B).

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A. CLASSIFICATION OF SUBJECT MATTER

B01J31/18	B01J31/04	C07F13/00	C07D213/22	C07D401/14
C11D3/39	C11D11/02	C11D17/06	D06L3/02	D06M11/50
D21C9/10	A61L2/18	A61L12/12	C07B33/00	C07D301/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B01J C07F C07D C11D D06L D06M D21C A61L C07B C02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 02/088289 A (SCHLINGLOFF GUNTHER ; WEINGARTNER PETER (CH); HAZENKAMP MENNO (CH); CI) 7 November 2002 (2002-11-07) cited in the application page 11, paragraph 2 page 12, paragraph 2 page 15, paragraphs 4,5 pages 16-17, bridging paragraph page 25, paragraph 4-6 application examples claims 1-19,25 ----- -/--	1-9, 12-25

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

13 September 2005

Date of mailing of the international search report

21. 03. 06

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Goebel, M

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 2004/039934 A (SCHLINGLOFF GUNTHER ; DANNACHER JOSEF (CH); HAZENKAMP MENNO (CH); CIBA) 13 May 2004 (2004-05-13) page 48, lines 1-12 page 52, line 33 - page 53, line 15 pages 54-55, bridging paragraph claims 1-23; examples	1-9, 12-20, 22-25
P,Y	-----	1,17-25
Y	PATENT ABSTRACTS OF JAPAN vol. 1999, no. 05, 31 May 1999 (1999-05-31) -& JP 11 050096 A (LION CORP), 23 February 1999 (1999-02-23) abstract paragraphs [0008] - [0011] paragraph [0032] paragraph [0048]; table 2 compound 20 24	1,17-25
Y	----- WO 01/05925 A (CIBA SPECIALTY CHEMICALS HOLDING INC; BACHMANN, FRANK; DANNACHER, JOSE) 25 January 2001 (2001-01-25) page 13, lines 15-28 page 14, line 24 - page 15, line 12 claims 1-7,10-21	1,17-25
P,X	----- WO 2004/104155 A (CIBA SPECIALTY CHEMICALS HOLDING INC; HAZENKAMP, MENNO; KVITA, PETR; N) 2 December 2004 (2004-12-02) page 15, lines 3-13 page 28, line 17 - page 33, line 5 page 38, lines 15-23 page 42, lines 1-14 page 43, lines 5-31 page 44, line 30 - page 45, line 24 claims 1,6,11-16,18-22,24	1-9, 12-16, 18,20, 22-25
P,Y	page 3, line 15 - page 6, line 18	1,17-25
A	----- US 6 610 641 B2 (HAGE RONALD ET AL) 26 August 2003 (2003-08-26) paragraphs [0061] - [0093]; claim 1	1-8, 14-25
A	----- US 3 912 648 A (BRADY THOMAS EUGENE ET AL) 14 October 1975 (1975-10-14) claim 1	1,24,25
A	----- DE 197 26 241 A (CALL KRIMHILD) 24 December 1998 (1998-12-24) page 2, lines 60-64 page 4, line 65 - page 5, line 2 claims 1,7,14,46	1,19
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97/48786 A (CALL HANS PETER) 24 December 1997 (1997-12-24) page 4, lines 6-10 page 10, lines 16-22 claims 1,6,13,22 -----	1,23,24
A	DATABASE WPI Week 0234 Derwent Publications Ltd., London, GB; AN 2002-304051 XP002289406 -& WO 02/14254 A (JAPAN SCI & TECHNOLOGY CORP) 21 February 2002 (2002-02-21) abstract; claims 11,12 -----	1,3-9,12
A	US 5 268 477 A (MCCALL JOHN M ET AL) 7 December 1993 (1993-12-07) claim 1; example A49 -----	1,9,12

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Information on patent family members

International Application No

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JP 11050096	A	23-02-1999	NONE	
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US 5268477	A	07-12-1993	NONE	